



4. Factors of Change

Explain the following:

- the 1980s recession
- the 1990s boom
- the 2000s boom
- the 2007-2009 recession
- the 2010s boom
- the 2020s boom
- the 2020s recession
- the 2020s boom
- the 2020s recession
- the 2020s boom

Introduction to the Course

Course Objectives:

- Provide a general overview of the field of psychology
- Introduce the student to the scientific method
- Provide a foundation for the more advanced courses in the major

Topics to be Covered:

- History of psychology
- Major schools of thought
- Major areas of research

Slide 1 of 10

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[illegible][illegible]

a) Stimulus

Stimulus sequence: Fixation cross, Target stimulus, Distractor stimulus, Response stimulus.

b) Response

Response options: No, Yes, No, Yes.

Figure 1 consists of 12 scatter plots, labeled (a) through (l), each showing the relationship between a specific variable and the number of children. The variables are: (a) Age, (b) Sex, (c) Education, (d) Income, (e) Religion, (f) Ethnicity, (g) Marital status, (h) Employment status, (i) Health status, (j) Social capital, (k) Parental involvement, and (l) Parental satisfaction. Each plot has a y-axis representing the number of children and an x-axis representing the variable. The plots show various trends: (a) Age shows a positive correlation; (b) Sex shows a positive correlation; (c) Education shows a negative correlation; (d) Income shows a positive correlation; (e) Religion shows a positive correlation; (f) Ethnicity shows a positive correlation; (g) Marital status shows a positive correlation; (h) Employment status shows a positive correlation; (i) Health status shows a positive correlation; (j) Social capital shows a positive correlation; (k) Parental involvement shows a positive correlation; and (l) Parental satisfaction shows a positive correlation.

[illegible][illegible]

Study design

The study design is a prospective cohort study. The study population consists of 1000 participants. The study outcomes are measured at baseline and follow-up.

Study outcomes

The study outcomes are measured at baseline and follow-up. The outcomes include the following:

- Primary outcome: [Outcome 1]
- Secondary outcome: [Outcome 2]
- Tertiary outcome: [Outcome 3]

[illegible]

Figure 1 Schematic representation of the experimental design. The figure is divided into four main sections: 1. Study 1 (top left), 2. Study 2 (bottom left), 3. Study 3 (top right), and 4. Study 4 (bottom right). Each section contains a diagram of the experimental setup and a list of variables or conditions. Study 1 shows a 2x2 factorial design with variables like 'Study 1 (top left)' and 'Study 2 (bottom left)'. Study 2 shows a 2x2 factorial design with variables like 'Study 3 (top right)' and 'Study 4 (bottom right)'. Study 3 shows a 2x2 factorial design with variables like 'Study 3 (top right)' and 'Study 4 (bottom right)'. Study 4 shows a 2x2 factorial design with variables like 'Study 3 (top right)' and 'Study 4 (bottom right)'.

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3. Effect of pH on Speciation
 A plot of the relative concentrations of the various species of a weak acid as a function of pH is shown in Figure 1. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

4. Effect of pH on Solubility
 The solubility of a weak acid as a function of pH is shown in Figure 2. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

5. Effect of pH on Complexation
 The complexation of a weak acid with a metal ion as a function of pH is shown in Figure 3. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

6. Effect of pH on Precipitation
 The precipitation of a weak acid as a function of pH is shown in Figure 4. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

7. Effect of pH on Adsorption
 The adsorption of a weak acid on a solid surface as a function of pH is shown in Figure 5. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

8. Effect of pH on Diffusion
 The diffusion of a weak acid through a membrane as a function of pH is shown in Figure 6. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

9. Effect of pH on Permeability
 The permeability of a weak acid through a membrane as a function of pH is shown in Figure 7. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

10. Effect of pH on Partitioning
 The partitioning of a weak acid between two phases as a function of pH is shown in Figure 8. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

11. Effect of pH on Extraction
 The extraction of a weak acid from one phase to another as a function of pH is shown in Figure 9. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

12. Effect of pH on Distribution
 The distribution of a weak acid between two phases as a function of pH is shown in Figure 10. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

13. Effect of pH on Concentration
 The concentration of a weak acid in a solution as a function of pH is shown in Figure 11. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

14. Effect of pH on Activity
 The activity of a weak acid in a solution as a function of pH is shown in Figure 12. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

15. Effect of pH on Potential
 The potential of a weak acid in a solution as a function of pH is shown in Figure 13. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

16. Effect of pH on Conductivity
 The conductivity of a weak acid in a solution as a function of pH is shown in Figure 14. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

17. Effect of pH on Viscosity
 The viscosity of a weak acid in a solution as a function of pH is shown in Figure 15. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

18. Effect of pH on Surface Tension
 The surface tension of a weak acid in a solution as a function of pH is shown in Figure 16. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

19. Effect of pH on Refractive Index
 The refractive index of a weak acid in a solution as a function of pH is shown in Figure 17. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

20. Effect of pH on Density
 The density of a weak acid in a solution as a function of pH is shown in Figure 18. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

21. Effect of pH on Heat Capacity
 The heat capacity of a weak acid in a solution as a function of pH is shown in Figure 19. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

22. Effect of pH on Enthalpy
 The enthalpy of a weak acid in a solution as a function of pH is shown in Figure 20. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

23. Effect of pH on Entropy
 The entropy of a weak acid in a solution as a function of pH is shown in Figure 21. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

24. Effect of pH on Gibbs Free Energy
 The Gibbs free energy of a weak acid in a solution as a function of pH is shown in Figure 22. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

25. Effect of pH on Helmholtz Free Energy
 The Helmholtz free energy of a weak acid in a solution as a function of pH is shown in Figure 23. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

26. Effect of pH on Enthalpy of Formation
 The enthalpy of formation of a weak acid in a solution as a function of pH is shown in Figure 24. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

27. Effect of pH on Entropy of Formation
 The entropy of formation of a weak acid in a solution as a function of pH is shown in Figure 25. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

28. Effect of pH on Gibbs Free Energy of Formation
 The Gibbs free energy of formation of a weak acid in a solution as a function of pH is shown in Figure 26. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

29. Effect of pH on Helmholtz Free Energy of Formation
 The Helmholtz free energy of formation of a weak acid in a solution as a function of pH is shown in Figure 27. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

30. Effect of pH on Enthalpy of Ionization
 The enthalpy of ionization of a weak acid in a solution as a function of pH is shown in Figure 28. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

31. Effect of pH on Entropy of Ionization
 The entropy of ionization of a weak acid in a solution as a function of pH is shown in Figure 29. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

32. Effect of pH on Gibbs Free Energy of Ionization
 The Gibbs free energy of ionization of a weak acid in a solution as a function of pH is shown in Figure 30. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

33. Effect of pH on Helmholtz Free Energy of Ionization
 The Helmholtz free energy of ionization of a weak acid in a solution as a function of pH is shown in Figure 31. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

34. Effect of pH on Enthalpy of Neutralization
 The enthalpy of neutralization of a weak acid in a solution as a function of pH is shown in Figure 32. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

35. Effect of pH on Entropy of Neutralization
 The entropy of neutralization of a weak acid in a solution as a function of pH is shown in Figure 33. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

36. Effect of pH on Gibbs Free Energy of Neutralization
 The Gibbs free energy of neutralization of a weak acid in a solution as a function of pH is shown in Figure 34. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

37. Effect of pH on Helmholtz Free Energy of Neutralization
 The Helmholtz free energy of neutralization of a weak acid in a solution as a function of pH is shown in Figure 35. The species are: H_2A , HA^- , and A^{2-} . The pK_a values are 4.0 and 7.0.

38. Effect of pH on Enthalpy of Dissociation
 The enthalpy of dissociation of a weak acid in a solution as a function of pH is shown in Figure 36. The species are: $\text{H}_2\$

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